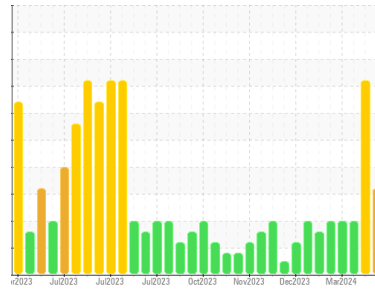




# OIL ANALYSIS REPORT

Sample Rating Trend



**WEAR**



Area  
**RIG 879**  
 Machine Id  
**R879-MP-02**  
 Component  
**Gearbox**  
 Fluid  
**GEAR OIL ISO 320 (--- GAL)**

## DIAGNOSIS

### ▲ Recommendation

The offline filter changed at the time of sampling has been noted. Resample at the next service interval to monitor.

### ▲ Wear

All component wear rates are normal.

### ▲ Contamination

There is a high amount of particulates present in the oil.

### ● Fluid Condition

The oil viscosity is lower than normal. The AN level is acceptable for this fluid.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>KL0014471</b>	KL0014319	KL0014302
Sample Date	Client Info		<b>03 Jul 2024</b>	07 May 2024	03 Apr 2024
Machine Age	hrs	Client Info	<b>0</b>	0	0
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>ABNORMAL</b>	SEVERE	ABNORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >200	<b>▲ 252</b>	▲ 388	40
Chromium	ppm	ASTM D5185m >10	<b>2</b>	4	0
Nickel	ppm	ASTM D5185m >10	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	9	0
Silver	ppm	ASTM D5185m	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m >25	<b>3</b>	● 154	<1
Lead	ppm	ASTM D5185m >50	<b>0</b>	0	0
Copper	ppm	ASTM D5185m >200	<b>7</b>	58	3
Tin	ppm	ASTM D5185m >10	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185m	<b>0</b>	<1	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 50	<b>2</b>	12	4
Barium	ppm	ASTM D5185m 15	<b>35</b>	1251	5
Molybdenum	ppm	ASTM D5185m 15	<b>&lt;1</b>	4	0
Manganese	ppm	ASTM D5185m	<b>2</b>	4	<1
Magnesium	ppm	ASTM D5185m 50	<b>1</b>	30	4
Calcium	ppm	ASTM D5185m 50	<b>26</b>	430	31
Phosphorus	ppm	ASTM D5185m 350	<b>126</b>	150	129
Zinc	ppm	ASTM D5185m 100	<b>26</b>	79	60
Sulfur	ppm	ASTM D5185m 12500	<b>9867</b>	10382	9849

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	<b>23</b>	▲ 615	12
Sodium	ppm	ASTM D5185m	<b>44</b>	54	24
Potassium	ppm	ASTM D5185m >20	<b>3</b>	61	<1

## FLUID CLEANLINESS

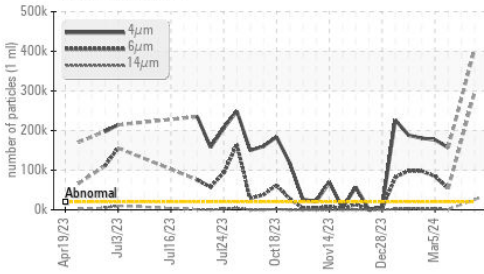
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	<b>▲ 405164</b>	---	▲ 156838
Particles >6µm	ASTM D7647	>5000	<b>▲ 296730</b>	---	▲ 53519
Particles >14µm	ASTM D7647	>640	<b>▲ 25394</b>	---	▲ 909
Particles >21µm	ASTM D7647	>160	<b>▲ 2445</b>	---	▲ 144
Particles >38µm	ASTM D7647	>40	<b>24</b>	---	5
Particles >71µm	ASTM D7647	>10	<b>1</b>	---	0
Oil Cleanliness	ISO 4406 (c)	>21/19/16	<b>▲ 26/25/22</b>	---	▲ 24/23/17

## FLUID DEGRADATION

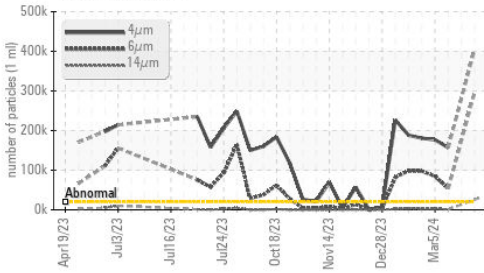
	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045 0.85	<b>0.20</b>	0.32	0.48

# OIL ANALYSIS REPORT

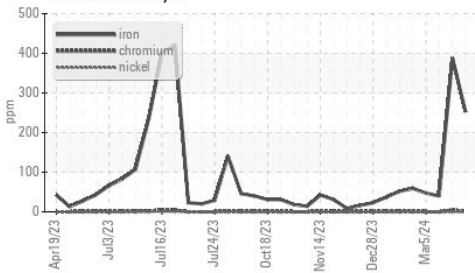
### ▲ Particle Trend



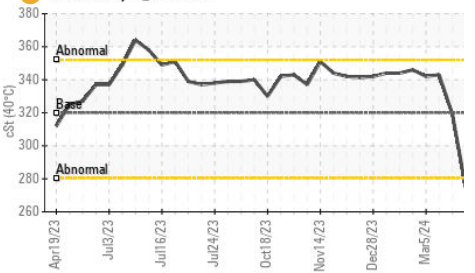
### ▲ Particle Trend



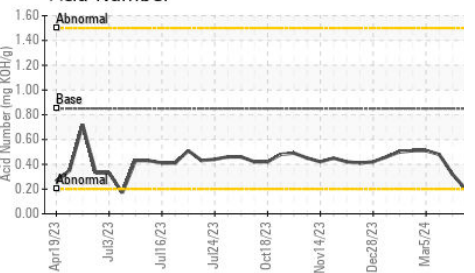
### ▲ Ferrous Alloys



### ● Viscosity @ 40°C



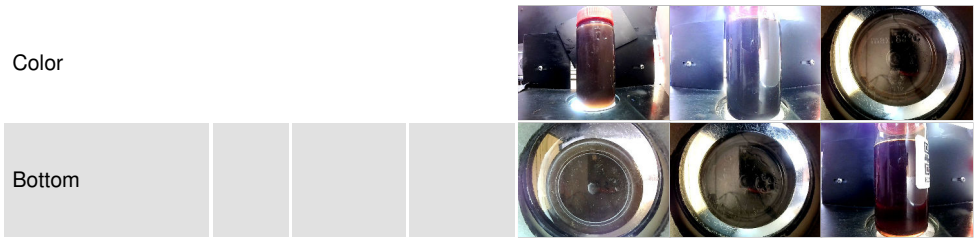
### Acid Number



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	▲ MODER	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

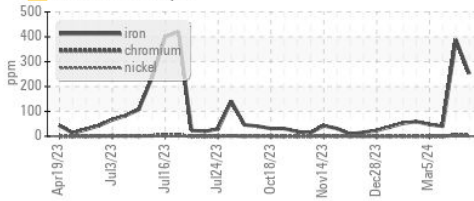
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320 ● 275	319	343

SAMPLE IMAGES	method	limit/base	current	history1	history2
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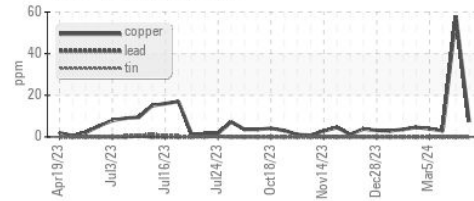


### GRAPHS

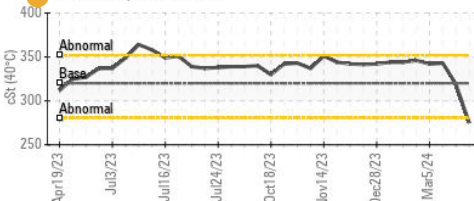
#### ▲ Ferrous Alloys



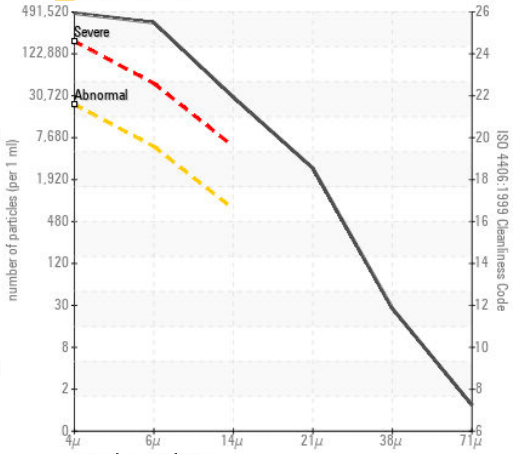
#### Non-ferrous Metals



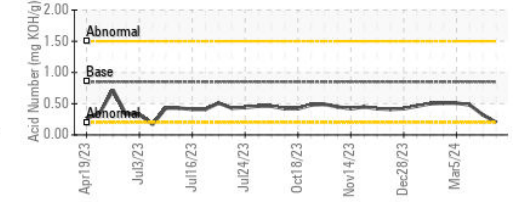
#### ● Viscosity @ 40°C



#### ▲ Particle Count



#### Acid Number



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KL0014471 **Received** : 12 Jul 2024  
**Lab Number** : 06234866 **Tested** : 15 Jul 2024  
**Unique Number** : 11123700 **Diagnosed** : 15 Jul 2024 - Don Baldrige  
**Test Package** : MOB 2 ( Additional Tests: PrtCount )

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 MIDLAND, TX  
 US 79706  
 Contact: RICKY MATA  
 ricky.mata@patenergy.com  
 T: (832)219-4559  
 F: (432)561-9388

To discuss this sample report, contact Customer Service at 1-800-237-1369.  
 \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.  
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)